

| L Number | Hits | Search Text   | DB    | Time stamp       |
|----------|------|---|-------|------------------|
| 1        | 884  | ((opening or trench) with (insulating or insulator))and ( layer with oxygen) and 438/\$.ccls.   | USPAT | 2002/01/07 13:39 |
| 2        | 64   | ((opening or trench) with (insulating or insulator))and ( layer with oxygen) and 438/\$.ccls. ) and ( concentration with oxygen)  | USPAT | 2002/01/07 13:40 |
| 3        | 27   | ((opening or trench) with (insulating or insulator))and ( layer with oxygen) and 438/\$.ccls. ) and ( concentration with oxygen with (low or high))   | USPAT | 2002/01/07 13:40 |
| 4        | 496  | ((opening or trench) with (insulating or insulator))and ( layer with oxygen) and 257/\$.ccls.   | USPAT | 2002/01/07 13:39 |
| 5        | 14   | ((opening or trench) with (insulating or insulator))and ( layer with oxygen) and 257/\$.ccls. ) and ( concentration with oxygen with (low or high))   | USPAT | 2002/01/07 13:40 |
| 6        | 12   | ((opening or trench) with (insulating or insulator))and ( layer with oxygen) and 257/\$.ccls. ) and ( concentration with oxygen with (low or high))) not ((opening or trench) with (insulating or insulator))and ( layer with oxygen) and 438/\$.ccls. ) and ( concentration with oxygen with (low or high))) | USPAT | 2002/01/07 13:40 |

| Type   | Hits | Search Text  | DBs                       | Time Stamp       |
|--------|------|--|---------------------------|------------------|
| 1 IS&R | 2    | ("4990997") or ("5739579") PN  | USPAT                     | 2001/12/27 11:43 |
| 2 IS&R | 3927 | ("438637") or ("438653") or ("438656") or ("438687") or ("438688") or ("438720") CCLS.   | USPAT, US-PGPUB, EPO, JPO | 2002/01/07 11:33 |
| 3 BRS  | 1044 | ("438637") or ("438653") or ("438656") or ("438687") or ("438688") or ("438720") CCLS.) and (barrier adj layer)  | USPAT                     | 2002/01/07 11:33 |
| 4 BRS  | 442  | ("438637") or ("438653") or ("438656") or ("438687") or ("438688") or ("438720") CCLS.) and (barrier adj layer)) and oxygen  | USPAT                     | 2002/01/07 07:58 |
| 5 BRS  | 285  | ("438637") or ("438653") or ("438656") or ("438687") or ("438688") or ("438720") CCLS.) and (barrier adj layer)) and oxygen and cvd  | USPAT                     | 2002/01/04 14:48 |
| 6 BRS  | 343  | ("438637") or ("438653") or ("438656") or ("438687") or ("438688") or ("438720") CCLS.) and (barrier adj layer)) and oxygen and (sputtering or pvd)  | USPAT                     | 2002/01/04 14:49 |
| 7 BRS  | 236  | ("438637") or ("438653") or ("438656") or ("438687") or ("438688") or ("438720") CCLS.) and (barrier adj layer)) and oxygen and cvd) and ("438637") or ("438653") or ("438656") or ("438687") or ("438688") or ("438720") CCLS.) and (barrier adj layer)) and oxygen and (sputtering or pvd))            | USPAT                     | 2002/01/04 14:54 |
| 8 BRS  | 152  | ("438637") or ("438653") or ("438656") or ("438687") or ("438688") or ("438720") CCLS.) and (barrier adj layer)) and oxygen and cvd) and ("438637") or ("438653") or ("438656") or ("438687") or ("438688") or ("438720") CCLS.) and (barrier adj layer)) and oxygen and (sputtering or pvd)) and copper | USPAT                     | 2002/01/04 14:54 |

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| Type    | Hits | Search Text  | DBs   | Time Stamp       |
|---------|------|--|-------|------------------|
| 9 BRS   | 138  | ("438637") or ("438653") or ("438656") or ("438687") or ("438688") or ("438720") CCLS.) and (barrier adj layer)) and oxygen and cvd) and ("438637") or ("438653") or ("438656") or ("438687") or ("438688") or ("438720") CCLS.) and (barrier adj layer)) and oxygen and (sputtering or pvd)) and copper and @ad<=20000208                             | USPAT | 2002/01/07 07:55 |
| 10 BRS  | 2    | ("438637") or ("438653") or ("438656") or ("438687") or ("438688") or ("438720") CCLS.) and (barrier adj layer)) and oxygen and cvd) and ("438637") or ("438653") or ("438656") or ("438687") or ("438688") or ("438720") CCLS.) and (barrier adj layer)) and oxygen and (sputtering or pvd)) and copper and @ad<=20000208) and (promoting adj layer)  | USPAT | 2002/01/04 14:59 |
| 11 BRS  | 7    | ("438637") or ("438653") or ("438656") or ("438687") or ("438688") or ("438720") CCLS.) and (barrier adj layer)) and oxygen and cvd) and ("438637") or ("438653") or ("438656") or ("438687") or ("438688") or ("438720") CCLS.) and (barrier adj layer)) and oxygen and (sputtering or pvd)) and copper and @ad<=20000208) and (metal with promoting) | USPAT | 2002/01/04 15:00 |
| 12 BRS  | 7    | ("438637") or ("438653") or ("438656") or ("438687") or ("438688") or ("438720") CCLS.) and (barrier adj layer)) and oxygen and cvd) and ("438637") or ("438653") or ("438656") or ("438687") or ("438688") or ("438720") CCLS.) and (barrier adj layer)) and oxygen and (sputtering or pvd)) and copper and @ad<=20000208) and (promoting with layer) | USPAT | 2002/01/04 15:01 |
| 13 IS&R | 2586 | ("438637") or ("438653") or ("438656") or ("438687") or ("438688") or ("438720") CCLS.   | USPAT | 2002/01/07 07:57 |

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|   | Comments | Error Definition | Errors |
|---|----------|------------------|--------|
| 1 |          |                  | 0      |
| 2 |          |                  | 0      |
| 3 |          |                  | 0      |
| 4 |          |                  | 0      |
| 5 |          |                  | 0      |
| 6 |          |                  | 0      |
| 7 |          |                  | 0      |
| 8 |          |                  | 0      |

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|    | Comments | Error Definition | Errors |
|----|----------|------------------|--------|
| 9  |          |                  | 0      |
| 10 |          |                  | 0      |
| 11 |          |                  | 0      |
| 12 |          |                  | 0      |
| 13 |          |                  | 0      |

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| Type   | Hits   | Search Text   | DBs             | Time Stamp       |
|--------|--------|---|-----------------|------------------|
| 14 BRS | 684058 | ((("438/637") or ("438/653") or ("438/656") or ("438/687") or ("438/688") or ("438/720")) CCLLS.) and barrier layer   | USPAT           | 2002/01/07 07:57 |
| 15 BRS | 1044   | ((("438/637") or ("438/653") or ("438/656") or ("438/687") or ("438/688") or ("438/720")) CCLLS.) and (barrier adj layer)   | USPAT           | 2002/01/07 07:57 |
| 16 BRS | 442    | ((("438/637") or ("438/653") or ("438/656") or ("438/687") or ("438/688") or ("438/720")) CCLLS.) and (barrier adj layer) and oxygen                                      | USPAT; US-PGPUB | 2002/01/07 07:59 |
| 17 BRS | 269    | ((("438/637") or ("438/653") or ("438/656") or ("438/687") or ("438/688") or ("438/720")) CCLLS.) and (barrier adj layer) and oxygen and copper                           | USPAT; US-PGPUB | 2002/01/07 07:59 |
| 18 BRS | 10     | ((("438/637") or ("438/653") or ("438/656") or ("438/687") or ("438/688") or ("438/720")) CCLLS.) and (barrier adj layer) and oxygen and copper and (diffusion with stop) | USPAT; US-PGPUB | 2002/01/07 08:06 |
| 19 BRS | 31     | ((("438/637") or ("438/653") or ("438/656") or ("438/687") or ("438/688") or ("438/720")) CCLLS.) and (barrier adj layer) and oxygen and copper and (elongation adj line) | USPAT           | 2002/01/07 08:04 |
| 20 BRS | 0      | ((("438/637") or ("438/653") or ("438/656") or ("438/687") or ("438/688") or ("438/720")) CCLLS.) and (barrier adj layer) and oxygen and copper and (Ti-Si-N)             | USPAT; US-PGPUB | 2002/01/07 08:09 |
| 21 BRS | 10     | ((("438/637") or ("438/653") or ("438/656") or ("438/687") or ("438/688") or ("438/720")) CCLLS.) and (barrier adj layer) and oxygen and copper and (Ti-Si-N)             | USPAT; US-PGPUB | 2002/01/07 08:32 |
| 22 BRS | 7      | ((("438/637") or ("438/653") or ("438/656") or ("438/687") or ("438/688") or ("438/720")) CCLLS.) and (barrier adj layer) and oxygen and copper and (Ti-Si-N)             | USPAT           | 2002/01/07 08:12 |

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| Type    | Hits  | Search Text   | DBs                                     | Time Stamp       |
|---------|-------|---|---|------------------|
| 23 BRS  | 7     | ((("438/637") or ("438/653") or ("438/656") or ("438/687") or ("438/688") or ("438/720")) CCLLS.) and barrier layer   | USPAT                                   | 2002/01/07 08:31 |
| 24 IS&R | 1     | ((("438/637") or ("438/653") or ("438/656") or ("438/687") or ("438/688") or ("438/720")) CCLLS.) and (barrier adj layer)   | USPAT                                   | 2002/01/07 08:35 |
| 25 BRS  | 24302 | ((("438/637") or ("438/653") or ("438/656") or ("438/687") or ("438/688") or ("438/720")) CCLLS.) and (barrier adj layer) and oxygen and copper and (diffusion with stop) | USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM | 2002/01/07 08:37 |
| 26 BRS  | 5813  | ((("438/637") or ("438/653") or ("438/656") or ("438/687") or ("438/688") or ("438/720")) CCLLS.) and (barrier adj layer) and oxygen and copper and (diffusion with stop) | USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM | 2002/01/07 10:50 |
| 27 BRS  | 1385  | ((("438/637") or ("438/653") or ("438/656") or ("438/687") or ("438/688") or ("438/720")) CCLLS.) and (barrier adj layer) and oxygen and copper and (diffusion with stop) | USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM | 2002/01/07 11:34 |
| 28 BRS  | 99    | ((("438/637") or ("438/653") or ("438/656") or ("438/687") or ("438/688") or ("438/720")) CCLLS.) and (barrier adj layer) and oxygen and copper and (diffusion with stop) | USPAT                                   | 2002/01/07 08:41 |
| 29 BRS  | 7     | ((("438/637") or ("438/653") or ("438/656") or ("438/687") or ("438/688") or ("438/720")) CCLLS.) and (barrier adj layer) and oxygen and copper and (diffusion with stop) | USPAT                                   | 2002/01/07 09:32 |

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| Comments | Error Definition | Errors |
|----------|------------------|--------|
| 14       |                  | 0      |
| 15       |                  | 0      |
| 16       |                  | 0      |
| 17       |                  | 0      |
| 18       |                  | 0      |
| 19       |                  | 0      |
| 20       |                  | 0      |
| 21       |                  | 0      |
| 22       |                  | 0      |

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| Comments | Error Definition | Errors |
|----------|------------------|--------|
| 23       |                  | 0      |
| 24       |                  | 0      |
| 25       |                  | 0      |
| 26       |                  | 0      |
| 27       |                  | 0      |
| 28       |                  | 0      |
| 29       |                  | 0      |

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